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MEMORANDUM FOR: DDI Information Processing Coordinator

SUBJECT: CRS Assumption of COINS Responsibility

REFERENCES: (a) Minutes of 12 August 1970 IP Board
Meeting, dated 14 August 1970

(b) Memorandum from AD/OCS to CIA
COINS Subsystem Manager, dated
5 August 1970, Subject: COINS
Computer System Planning

1. The Information Processing Board, at its 12 August meeting, discussed more aggressive Agency participation in the COINS activity, starting with an eight-hour/day operation. In order to determine how this could best be accomplished, the IP Board Chairman requested estimates of personnel, space, hardware and software requirements, and costs along with factors bearing on timing. The options presented in the 5 August memorandum from AD/OCS provided a set of alternatives to be considered. This memorandum is the CRS response to the above request and discusses various other aspects of the CRS assumption of responsibility for COINS.

General Considerations

2. It is clear that the long-range future of COINS in its present configuration is anything but firm. At the 12 August meeting, Chairman/ IP Board commented that "ARPA ERF is lurking in the wings as a COINS replacement," and you noted that CIA participation in the project was,

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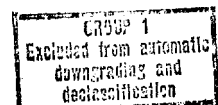
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as of now, limited to two more years. In the light of these uncertainties, it follows that CRS should avoid alternatives which would "lock us in concrete." This has a definite bearing on the form of equipment acquisition (lease vs. purchase) and on the extent of software development CRS should undertake over the short run.

3. A number of factors have a direct bearing on the question of CRS assumption of responsibility for COINS and the resources required for implementation. Several of these are noted below:

a. The COINS project cannot operate in a multi-programming mode on the same hardware with projects involving information classified at the TKH level or containing "Agency-sensitive" data. Unless present security restraints are lifted or future hardware/software safeguards satisfy Office of Security requirements, this will be a continuing problem and must be taken into account in CRS planning. At the least, it makes highly efficient utilization of the equipment almost impossible.

b. It follows logically then that COINS will be operational eight hours per day, five days per week, on a dedicated computer. Security considerations, noted above, preclude operation of COINS on the present CRS computer due to the sensitivity of data handled in other CRS applications (i.e., TKH and CIA Internal Use Only materials).

c. UNIVAC equipment should be eliminated as a candidate equipment configuration for COINS purposes. UNIVAC is undesirable in that the system would require greater space than equivalent IBM equipment and would have little utility for non-COINS applications in the CRS job environment. CRS has no UNIVAC experience and the 494 equipment proposed by AD/OCS's memorandum

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would be incompatible with CRS's IBM systems; thus, training and other start-up costs would be sharply increased and implementation delayed. Preliminary investigation, moreover, suggests that NPIC-developed software is only marginally satisfactory for the COINS files and a considerable programming effort would be involved in adapting it. NPIC, which employs UNIVAC gear, has expressed only marginal interest in having similar equipment available in CRS for back-up purposes.

d. Adequate physical space must be made available to house the hardware, once selected. Space is a critical problem which will have a strong bearing on the timing of any CRS assumption of COINS responsibilities. CRS has investigated various 360/40 and 360/50 equipment configurations and estimates that 1200-1500 square feet will be required, depending upon the shape of the available space and other variables. CRS is currently planning the preparation of an environmentally suitable site (false flooring, adequate power and air handling capacity) for its existing and programmed equipment and the space might be expanded to include the 1200-1500 square feet needed for COINS. The new site, however, will not be readied for 12-18 months, at best. We assume that this time delay could be reduced if the Real Estate and Construction Division of OL was given a high enough priority to expedite construction and cut red tape.

e. CRS requirements for providing on-line access to the CIRIS data base cannot be determined at this time. The referenced memorandum from AD/OCS recommended that CRS also assume responsibility for the CIRIS application inasmuch as external access is required. Even without benefit of a thorough investigation, it is evident that a number of problems would be involved. AD/OCS seemed to imply that CIRIS could be handled by the same

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computer system as COINS. The CIRIS file, as we
understand it, however, contains both TKH and Agency-
sensitive data and therefore, given current security
guidelines, could not be run concurrently on the same
equipment as COINS. Moreover, CIRIS currently
operates in the batch mode only. Work is under way
to permit on-line operation utilizing the GIM software
package with implementation programmed for the spring
of 1971. We are not acquainted with the communications
arrangements planned to provide access for the DASD(I).
The time available for preparation of this paper is
insufficient to permit CRS to assess the full implications
of assuming responsibility for CIRIS. At the very
minimum, CRS estimates that six to eight additional
weeks would be needed to determine feasibility, costs,
and other requirements. Even then, inasmuch as the
system software is still under development, the
estimates would be extremely tentative in nature.

Hardware

4. AD/OCS suggested three different equipment configurations for
CRS support of COINS: the IBM 360/40 with either 256K or 384K of core
(Tabs 1 and 2), and the UNIVAC 494 (Tab 3). This paper also considers
an IBM 360/50 system (Tab 4). The alternatives are multiplied by a
factor of two if purchase vs. rental is considered. The IBM systems are
deemed preferable, as mentioned earlier, because of CRS experience with
them, their compatibility with other CRS equipment, and the relative ease
with which CRS software could be adapted to them. It is for these reasons,
as well as a desire to save space and manpower, that CRS has eliminated
the UNIVAC equipment from its further consideration. UNIVAC is also
the more expensive.

5. The IBM 360/40 configurations are attractive primarily from a
rental cost and, to a lesser degree, space requirement standpoint. Monthly
rental/maintenance ranges from $21,700 for the 256K machine to $25,900
for the 384K model. It is doubtful that 256K of core would suffice for both
COINS needs (Tab 5) and the unknown requirements of CIRIS, but, as has
already been pointed out, security considerations would seem to preclude

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handling both applications on-line simultaneously on the same computer. OCS personnel report that the total COINS package was never successfully tested on a 360/40. Nor did it operate successfully on a 360/50. COINS did not run satisfactorily until it was put on a dedicated 360/67. An analysis of core requirements leads us to conclude that there is no technical reason why the COINS software (OS-13, TSMON/TSAR) should not run on a 256K 360/40, though experience suggests that any switch in equipment tends to generate unexpected complications. A 360/40 might represent a temporary solution, but its core limitations and other potential problems make the remaining alternative seem more attractive.

6. Monthly rental/maintenance on a minimal 360/50 configuration would increase COINS equipment costs to approximately $31,500. Straight rental is not the only avenue open, however, since DDP/RID has an Agency-owned 360/50 which it wishes to replace with one of the newly announced IBM 370/155s. The surplus Model 50 system, if made available to CRS, would represent a considerable dollar saving over the Model 40 equipment, even though I/O rental would still be required. I/O rental, plus maintenance on the 360/50 main frame, would cost approximately $10,827 per month (Tab 4). The DDP would not be in a position to release the 360/50 before the spring of 1971, however, and a more likely release date would be October 1971. If speed is critical, a 360/50 could be rented until the Agency-owned device is available (assuming once again that there will be a site to house it). The 360/50 would unquestionably be preferable to either 360/40 alternative because of its greater capacity and the reduced costs made possible by the maintenance-only arrangement on the CPU. A more convincing argument, however, is the flexibility made possible by the larger core (512K) available with this model. As noted in paragraph 3, above, the uncertainties associated with COINS development make flexibility very desirable. The fact that CRS already has a Model 50 in operation would facilitate early testing of the COINS software on in-house equipment.

7. In summary, therefore, our best choice would seem to be IBM equipment, and, at this stage of consideration, CRS is convinced that transfer of the Agency-owned 360/50 to CRS would be the most economical and advantageous option from all standpoints. No firm

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commitment can be made on a date for the transfer of COINS responsibilities to CRS. CRS first needs the properly prepared space, then the hardware and finally the software which is discussed below.

Space

8. To accommodate the recommended IBM equipment, 1200-1500 square feet will be required as a suitable site. Based on OCS and RID experience, costs normally run about $50 per square foot. As you are aware, prior to learning of the necessity of providing space for a COINS-dedicated computer, $150,000 was earmarked for renovation of a 3200 square foot area for the CRS computer center. If the proposed CRS computer site is to be expanded to provide space for a COINS computer, costs will be somewhat higher than the above estimates, due in part to the general trend of rising costs and in part to the fact that extension of the planned area will involve space where existing ceilings are lower. We estimate now that about $65-75 square foot will be required. Using $70/square foot and a site size of 1400 square feet for purposes of computation, we arrive at a projected site preparation cost of $98,000.

Software

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Manpower

12. The preceding recitation of problems suggests to us that CRS personnel could initially do little more than operate the system as is. Even this limited assumption of responsibility would require continuing support from OCS. Lacking adequate documentation, it would be impossible for CRS to maintain the system without either the assistance of the OCS personnel who developed it, or a four to six month orientation program to familiarize CRS programmers with its intricacies. The latter option would require at least two persons (one for back-up) from our programming staff working full-time with Mr. Fagan of OCS. Installation of a dedicated computer would necessitate a full-time operator, and allowance for leave, etc., would raise this requirement to at least one and one-half persons. It has already been estimated that two members of the programming branch would be involved. Any decision to replace present OCS software with a more effective system (RECON/STIMS or CIM have been suggested by AD/OCS) would considerably increase programming manpower requirements, as would implementation of the CIRIS recommendation. For the short range, however, continuation of the present software systems seems the only viable alternative. Estimates of manpower costs, assuming that the system runs under TSMON/TSAR and that assistance from OCS is forthcoming, are as follows:

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Equipment Operators (GS-9), $12,130 x 1 1/2 $18,195 *
Systems Analysts/Programmers (GS-12), $17,260 x 2   34,520 *

                                              Total $52,715

13. This memorandum must consider the manpower and monetary costs of building files that might make COINS useful (it does not discuss the feasibility, which is questionable, of building such files).   Unless new files are introduced, increased concern with the computer aspects of COINS will do little to persuade outside spectators of increased CIA support for COINS.   The magnitude of the file building effort must be determined on the basis of Agency management views on how much to devote to COINS.   There is no other rational basis for a decision (e.g., no demonstrated need or requirement for specific files).   CRS believes that five people with an average grade of GS-11 is the minimum manpower required for a believable file building effort.

14. As an example of how much file building costs, we cite the computer-based Soviet Elite file on 554 major Soviet officials. It contains detailed data such as birth date, birth place, ethnic origin, awards granted, internal and external travel, schools attended, and positions held.   The file required nine months to prepare, involved 12 analysts and six intelligence assistants, and took 5 1/2 man years to complete.   Another 1/2 man year was required for keypunching and developing software.   Early in 1963 another 1 1/2 man years were utilized to add 33 individuals to the file, to update and correct the original records, and to make certain revisions in the file necessitated by programming requirements.   We estimate that it requires about 30 man hours per week to maintain the file.   The little used result is a fairly complete record which gives the capability for querying and manipulating the data in a variety of ways, but at substantial cost.   Tab 6, a 6 August 1970 CRS memorandum to the CIA COINS Subsystem Manager entitled "COINS Diplomatic Personality Index File," provides additional evidence of the extreme cost of building a file which the COINS management has requested and which it might again propose on learning of increased CIA involvement in COINS.

* This represents both salary and benefits (retirement, insurance, and hospitalization—8.2% of base salary). Training costs would be over and above these sums.

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15. Currently, the CIA COINS Subsystem Manager spends at least one day per week at the task. (Between May 1968 and April 1969, he spent full time on the task.) Other managerial involvement occupies at least another estimated CRS day per week. CRS estimates that an enhanced CIA COINS effort would consume at least the total efforts of one GS-15 in management duties. For costing purposes, a GS-14 slot is added to the T/O.

Conclusion

16. The IBM 360/50 512K byte computer now used by DDP/RID is the best selection for the COINS application on the basis of cost, capacity, compatibility, and availability. Initially at least, CRS would have no choice but to adopt OCS software without modification and to rely upon close support from OCS personnel now assigned to the COINS project. OCS assistance would be needed to help install and operate the system on 360/50 hardware and to train CRS programmers in the logic of the software for at least six months after the transfer of responsibility. We have strong reservations about the long-term suitability [_____] for use with the COINS application. Initial analysis suggests that CRS consider the OCS software as an interim solution only and immediately undertake a study of COINS (and perhaps CIRIS) requirements to determine future hardware and software needs, bearing in mind the COINS goal of standardization. This study should take no more than three months. More refined estimates of personnel costs will be dependent on the outcome of the study.

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